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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,176	08/27/2003	Hidekazu Arase	5077-000183	4782
27572	7590	06/08/2006	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			SHOSHO, CALLIE E	
			ART UNIT	PAPER NUMBER
			1714	
DATE MAILED: 06/08/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/649,176	<b>Applicant(s)</b> ARASE ET AL.	
	<b>Examiner</b> Callie E. Shosho	<b>Art Unit</b> 1714	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

**Continued Examination Under 37 CFR 1.114**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/30/06 has been entered.
2. All outstanding rejections are overcome by applicants' amendment filed 3/30/06.

**Claim Rejections - 35 USC § 112**

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:  
  
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claims 1 and 3-13 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compound comprising an alkoxysilane comprising a hydrophobic group that is alkyl group, fluoroalkyl group, or both alkyl group and fluoroalkyl group, does not reasonably provide enablement for alkoxysilane comprising any type of hydrophobic group. The specification does not enable any person skilled in the art to which it

pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Case law holds that applicant's specification must be "commensurately enabling [regarding the scope of the claims]" *Ex Parte Kung*, 17 USPQ2d 1545, 1547 (Bd. Pat. App. Inter. 1990). Otherwise **undue experimentation** would be involved in determining how to practice and use applicant's invention. The test for undue experimentation as to whether or not all compounds within the scope of claims 1 and 3-13 can be used as claimed and whether claims 1 and 3-13 meet the test is stated in *Ex parte Forman*, 230 USPQ 546, 547 (Bd. Pat. App. Inter. 1986) and *In re Wands*, 8 USPQ2d 1400, 1404 (Fed.Cir. 1988). Upon applying this test to claims 1 and 3-13, it is believed that undue experimentation **would** be required because:

(a) *The quantity of experimentation necessary* is **great** since claims 1 and 3-13 read on water-soluble substance obtained from alkoxysilane comprising any type of hydrophobic group such as aryl group, alkylaryl group, cycloalkyl group, arylene group, etc.

(b) There is **no direction or guidance presented** for making an ink comprising water-soluble substance obtained from alkoxysilane comprising any type of hydrophobic group such as aryl group, alkylaryl group, cycloalkyl group, arylene group, etc.

(c) There is an **absence of working examples** concerning making ink comprising water-soluble substance obtained from alkoxysilane comprising any type of hydrophobic group such as aryl group, alkylaryl group, cycloalkyl group, arylene group, etc.

In light of the above factors, it is seen that undue experimentation would be necessary to make and use the invention of claims 1 and 3-13.

Art Unit: 1714

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The scope of claim 9 is confusing given that claim 9 depends on a cancelled claim.

Should the dependency of claim 9 be changed from claim 2 to claim 1?

Assuming claim 9 is amended to depend from claim 1, it is noted that claim 9 recites the limitation "the silicon compound having a hydrophobic group" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. It is suggested that, for instance, "the silicon compound having a hydrophobic group" is changes to "the second compound".

**Claim Rejections - 35 USC § 102**

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3-4, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumura et al. '928 (U.S. 6,306,928).

Matsumura et al. '928 discloses ink jet ink comprising colorant, humectant, and water-soluble organosilicone obtained from hydrolyzing amino group containing alkoxy silane, C<sub>1</sub>-C<sub>8</sub> alkyl group containing alkoxy silane, and alkoxy silane with no amino groups, i.e. monoepoxy compound. There is also disclosed ink jet printer comprising the ink wherein the ink is discharged from the printer onto substrate. Although there is no explicit disclosure of ink cartridge comprising the above ink, it is clear that the ink jet printer inherently possesses cartridge to store ink (col.1, lines 5-25, col.2, line 41-col.3, line 25, col.3, lines 33-38 and 42-65, col.7, lines 5-6 and 25, col.7, line 65-col.8, line 5, col.8, lines 9-10, col.10, lines 34-40, and col.14, lines 35-39).

Although there is no disclosure that the water-soluble organosilicone undergoes condensation polymerization in the absence of water, given that Matsumura et al. '928 disclose water-soluble substance as presently claimed, it is clear that the water-soluble organosilicone would inherently undergo condensation polymerization in the absence of water and thereby inherently form a network so as to enclose the colorant as presently claimed. Additionally, given that the water-soluble substance of Matsumura et al. '928 has hydrophobic group as presently claimed, it is clear that the network would also inherently have hydrophobicity as presently claimed.

In light of the above, it is clear that Matsumura et al. '928 anticipate the present claims.

**Claim Rejections - 35 USC § 103**

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1714

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 8, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumura et al. '928 (U.S. 6,306,928) in view of Blease et al. (U.S. 6,585,362).

The disclosure with respect to Matsumura et al. '928 in paragraph 8 above is incorporated here by reference.

The difference between Matsumura et al. '928 and the present claimed invention is the requirement in the claims of penetrant.

Blease et al., which is drawn to ink jet ink, disclose the use of penetrant in order to help the ink penetrate into the substrate (col.6, lines 37-42).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use penetrant in the ink jet ink of Matsumura et al. '928 in order to produce ink with good penetration into substrate and thus, quicker drying and less smudging, and thereby arrive at the claimed invention.

12. Claims 1, 3, and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blease et al. (U.S. 6,585,362) in view of Matsumura et al. '966 (U.S. 6,077,966).

Blease et al. disclose ink jet ink comprising water, colorant, humectant, and penetrant. There is also disclosed cartridge comprising the ink as well as ink jet printer comprising the ink wherein the ink is discharged from the printer onto substrate (col.1, lines 16-17, col.2, lines 30-31, col.3, line 50, col.5, lines 41-44 and 61, col.6, lines 4 and 38, and col.11, lines 38-40).

The difference between Blease et al. and the present claimed invention is the requirement in the claims of water-soluble substance that is condensation polymerized in the absence of water.

Matsumura et al. '966 discloses water-soluble silicone compound prepared by co-hydrolysis of alkyl trialkoxysilane, alkoxysilane without an amino group, and amino containing alkoxysilane in order to produce coating with water resistance (col.1, line 60-col.2, line 28, col.2, lines 37-38, and col.4, lines 53-56).



Given that Blease et al. in combination with Matsumura et al. '966 discloses water-soluble substance identical to that presently claimed, it is clear that the water-soluble substance would intrinsically condensation polymerize in the absence of water and therefore intrinsically form a network so as to enclose the colorant as present claims. Additionally, given that the water-soluble substance of Matsumura et al. '966 has hydrophobic group as presently claimed, it is clear that the network would also intrinsically have hydrophobicity as presently claimed.

In light of the motivation for using water-soluble substance disclosed by Matsumura et al. '966 as presently claimed, it therefore would have been obvious to one of ordinary skill in the art to use such substance in the ink of Blease et al. in order to produce with good water-resistance, and thereby arrive at the claimed invention.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Edelmann et al. (U.S. 6,251,989) discloses water-soluble organosilane formed by hydrolyzing and condensing mixture of amino-functional organosilane, fluoro-functional organosilane, and organosilane. However, given that this water-soluble substance is already condensed, it is clear that such water-soluble substance would not undergo condensation polymerization in the absence of water as required in the present claims.

Matsumura et al. (U.S. 5,883,185) disclose reaction product resulting from co-hydrolysis and condensation of fluorinated alkyl group-containing alkoxysilane, amino group-containing alkoxysilane, and alkyl group-containing alkoxysilane. However, given that this water-soluble

Art Unit: 1714

substance is already condensed, it is clear that such reaction product would not undergo condensation polymerization in the absence of water as required in the present claims.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho  
Primary Examiner  
Art Unit 1714